



Valvular Heart Disease

PERFORMANCE OF BIOLOGICAL AORTIC VALVE PROSTHESES IN RELATION TO BODY SIZE

ACC Moderated Poster Contributions
McCormick Place South, Hall A
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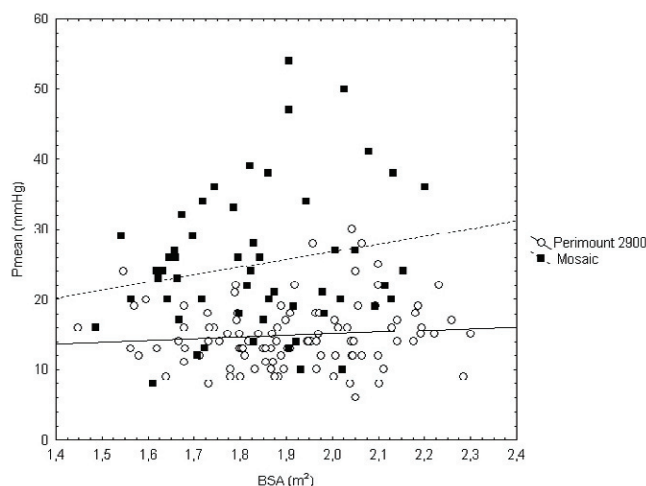
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Background: The primary purpose of aortic valve replacement is to improve hemodynamic conditions. Regardless the patient's body size, the surgeons have the ambition to implant a bioprosthesis of largest possible size, to avoid patient-prosthesis mismatch (PPM). The aim of this study was to evaluate hemodynamic performances of different biological aortic valve prostheses in relationship to body size.

Methods: Two hundred seventeen consecutive patients receiving aortic bioprotheses were included. Six different models were used (Freestyle, Mosaic, Epic, Epic Supra, Perimount 2900 and Perimount Magna). Echocardiographic measurements and calculations concerning the hemodynamic conditions of the bioprotheses were analyzed.

Results: The results showed no tendency to higher mean transvalvular pressure gradients in patients with small body surface areas compared to patient with large body surface areas.



Statistical analyses of the most commonly used models showed significantly lower pressure gradients for Perimount 2900 compared with Mosaic (Pmean 15 mmHg vs. 25 mmHg ($p<0.001$)) and significantly higher value for index effective orifice area (iEOA) (0.77 cm²/m² vs. 0.60 cm²/m² ($p<0.001$)).

Conclusion: Perimount 2900 has significantly better hemodynamic characteristics both in terms of pressure gradients and iEOA in comparison with Mosaic. Interestingly, none of the two valve models showed a tendency towards higher mean transvalvular pressure gradients with decreasing BSA.